

The Tools

Models

&

Simulations

19970312 025

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DEPARTMENT OF THE ARMY

OFFICE OF THE CHIEF OF STAFF OF THE ARMY
LOUISIANA MANEUVERS TASK FORCE
FORT MONROE, VIRGINIA 23651-5143

REPLY TO
ATTENTION OF

Louisiana Maneuvers
Task Force

27 MAY 1993

SUBJECT: Models, Simulations and Tools

This package on models, simulations and tools is provided to assist issue proponents in identifying tools for assessing their issues. The package is in four sections:

- a. A break out of models and simulations from crisis action thru demobilization.
- b. A break out of models and simulations by Louisiana Maneuver issues.
- c. Examples of confederated models and simulations used during exercises as well as work being done for the future.
- d. A short description and purpose of the model, simulation or tool.

I hope you find this model and simulation package useful. I would appreciate feedback and any helpful suggestions.

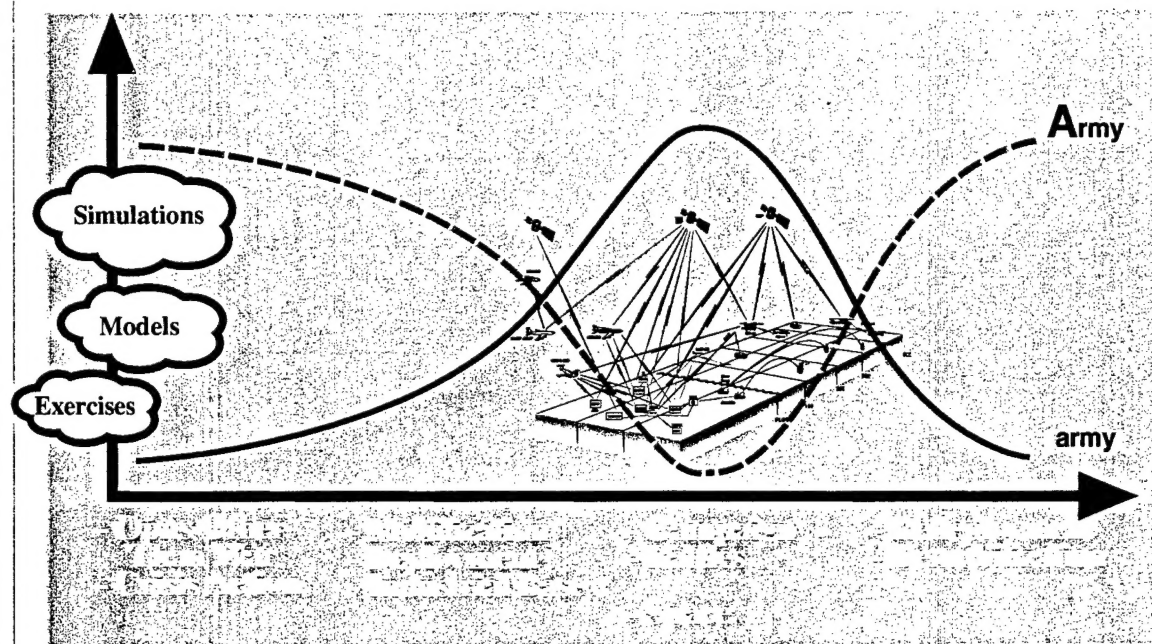
POC for this action is Mr. Richard T. Maruyama, DSN: 680-5838.

Sincerely,

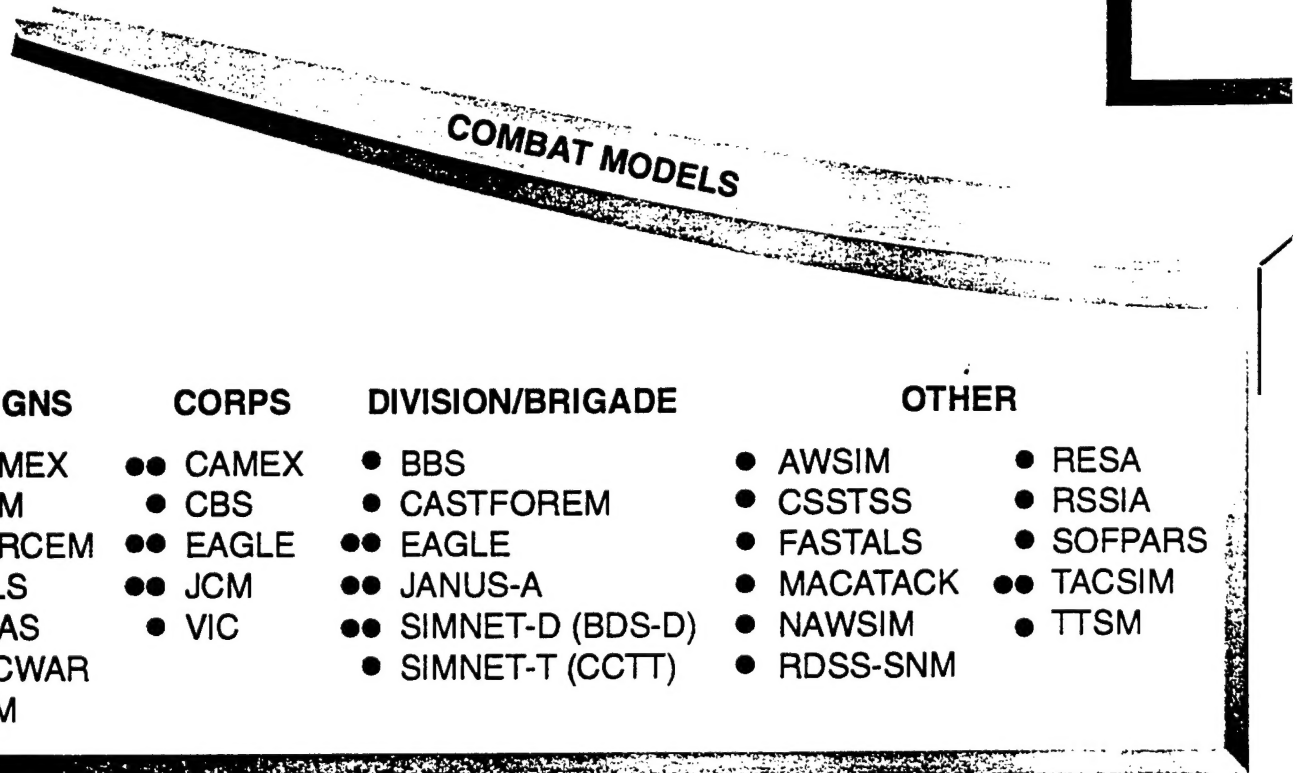
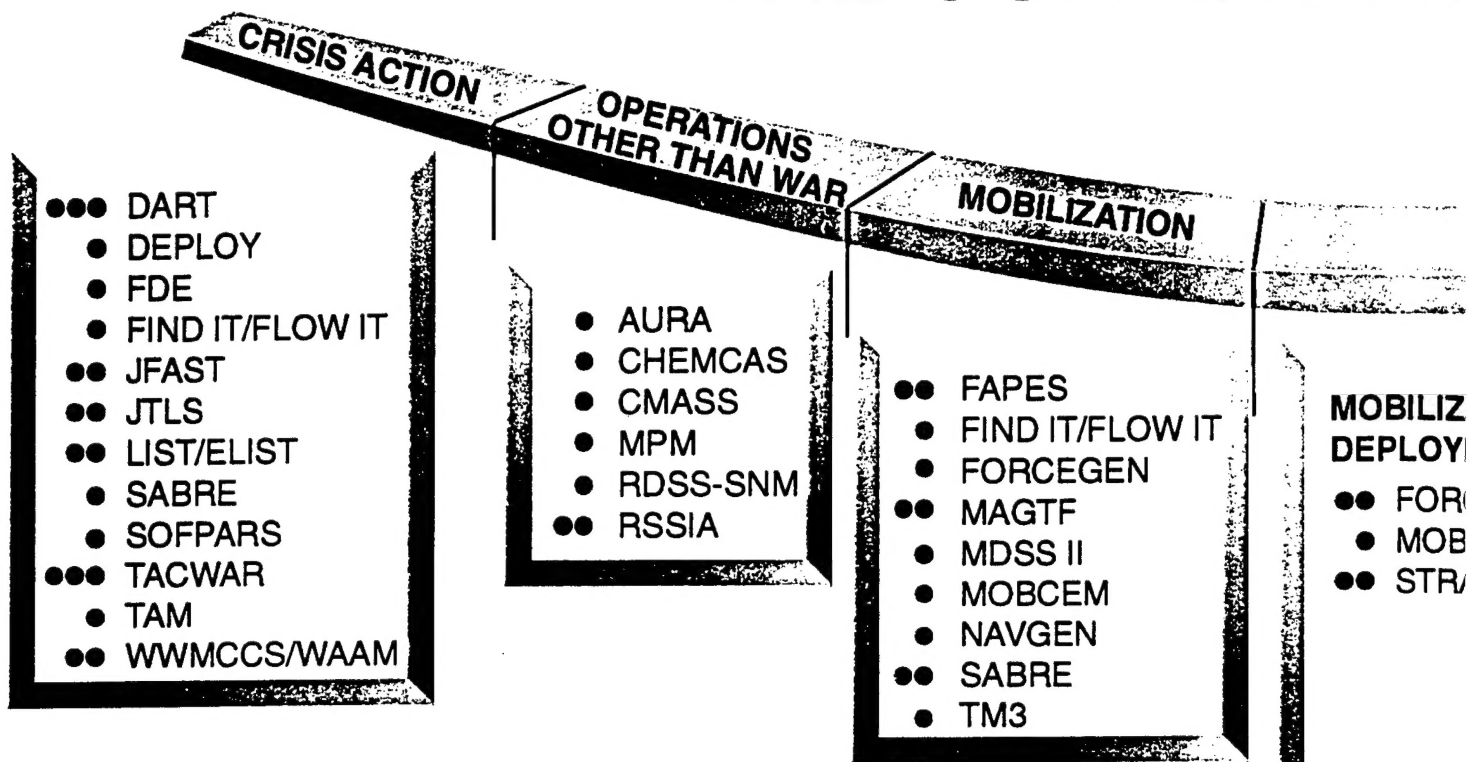
Tommy R. Franks
Brigadier General, U.S. Army
Director, Louisiana Maneuvers
Task Force

The Continuum of Operations

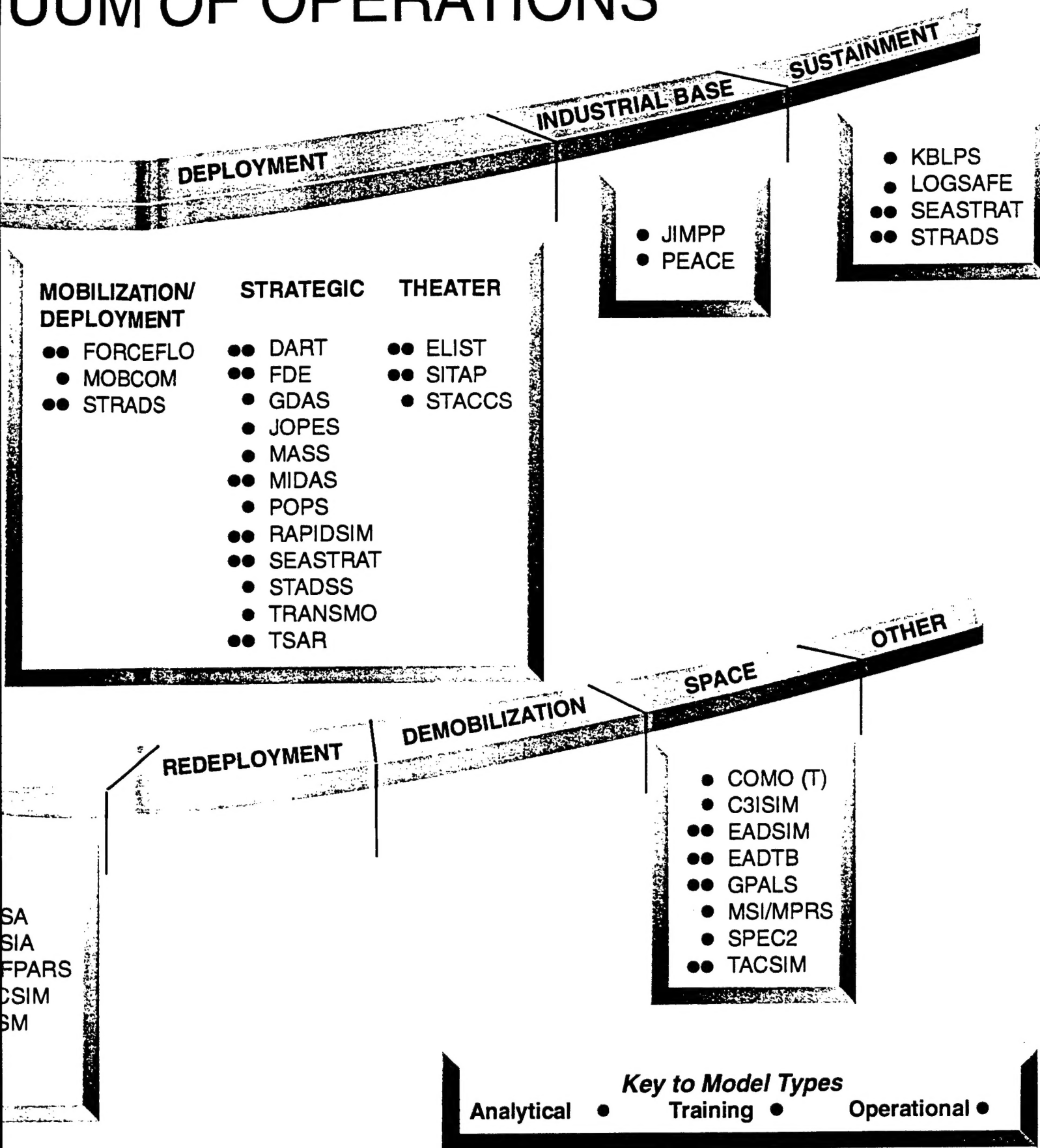
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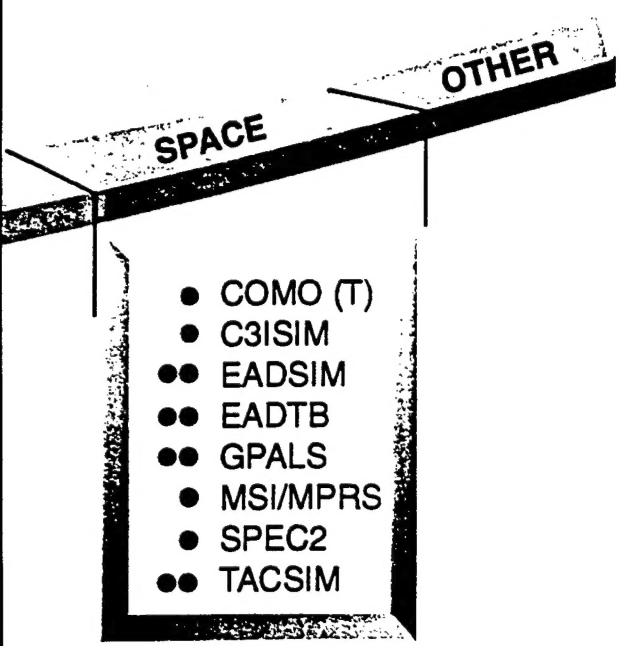
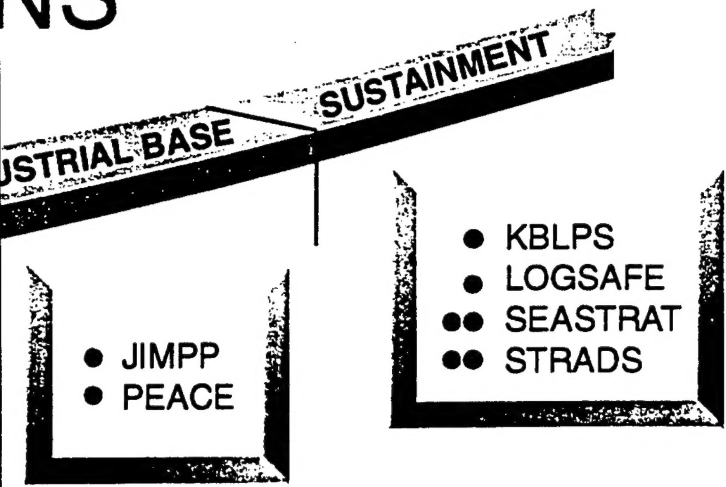
THE CONTINUUM



UUM OF OPERATIONS



NS

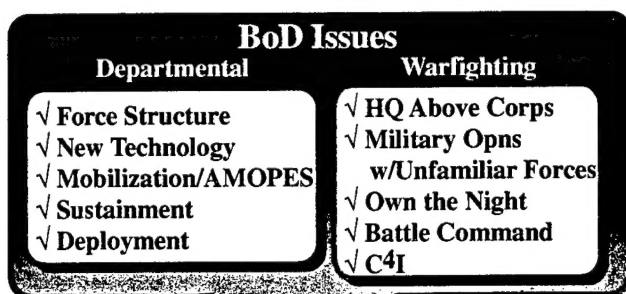


Key to Model Types

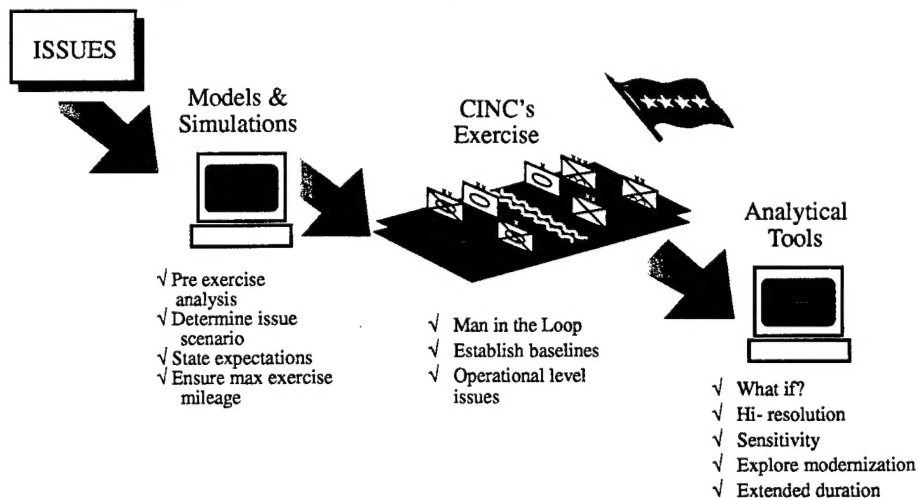
● Training ● Operational ●

Issue/Model Linkup

B



Investigative techniques....



TOOLS for LAM Issue Analysis

FY93 ISSUES

Force Structure

Operational Tool/Decision Aid:

DART	JOPES	MAGTF II	TACWAR
------	-------	----------	--------

Analysis Tool/Seminar Driver:

DART	FINDIT/FLOWIT	FORCEGEN	MAGTF II
SABRE	TACWAR	TM3	

Exercise Driver:

DART	DEPLOY	TACWAR	
------	--------	--------	--

Equipping

Operational Tool/Decision Aid:

ELIST	MASS	MIDAS	
-------	------	-------	--

Analysis Tool/Seminar Driver:

CAMEX	CASTFOREM	COMO(T)	EADTB
EADSIM	EAGLE	ELIST	FDE
GDAS	GPALS	JANUS-A	JFAST
MIDAS	POPS	SIMNET-D(BDS-D)	TACSIM
TRANSMO	VIC		

Exercise Driver:

BBS	CAMEX	CBS	CSSTSS
EADTB	EADSIM	EAGLE(BDS-D)	ELIST
GPALS	JANUS-A	JCM	JFAST
SIMNET-T(CCTT)	TACSIM		

Mobilization

Operational Tool/Decision Aid:

DART	FAPES	MAGTF II	MDSS II
MOBCON	STRADS		

Analysis Tool/Seminar Driver:

DART	FASTALS	FDE	FINDIT/FLOWIT
FORCEFLO	FORCEGEN	JIMPP	MAGTF II
MOBCEM	NAVGEN	PEACE	SABRE
TM3			

Exercise Driver:

DART
SABRE

FAPES

FORCEFLO

MPM

Sustainment

Operational Tool/Decision Aid:

ELIST KBLPS
SEASTRAT

MASS

MIDAS

Analysis Tool/Seminar Driver:

CEM ELIST
MIDAS POPS
TRANSMO VIC

FASTALS
SEASTRAT

LOGSAFE
STADSS

Exercise Driver:

CSSTSS ELIST

Deployment

Operational Tool/Decision Aid:

DART ELIST
MOBCON SEASTRAT
STRADS TSAR

JOPES
SITAP

MASS
STACCS

Analysis Tool/Seminar Driver:

DART ELIST
FORCEFLO GDAS
MIDAS POPS
SEASTRAT SITAP
TSAR

FDE
JFAST
RAPIDSIM
STRADS

FINDIT/FLOWIT
JTLS
RSAS
TRANSMO

Exercise Driver:

DART ELIST
JFAST JTLS

FDE
RAPIDSIM

FORCEFLO

HQ EAC

Operational Tool/Decision Aid:

Analysis Tool/Seminar Driver:

CEM FORCEM

RSAS

TAM

Exercise Driver:

Unfamiliar Forces

Operational Tool/Decision Aid:

RSSIA

Analysis Tool/Seminar Driver:

JANUS-A	POPS	RSAS	VIC
<u>Exercise Driver:</u>			
AWSIM	CBS	CMASS	CSSTSS
JANUS-A	JCM	NAWSIM	RDSS-SNM
RSSIA			

Own the Night

Operational Tool/Decision Aid:

Analysis Tool/Seminar Driver:

C3ISIM	CAMEX	CASTFOREM	EAGLE
JANUS-A	SIMNET-D(BDS-D)	TACSIM	VIC
<u>Exercise Driver:</u>			
BBS	CAMEX	CBS	CSSTSS
EAGLE	JANUS-A	JCM	SIMNET-T(CCTT)
TACSIM			

Battle Command

Operational Tool/Decision Aid:

Analysis Tool/Seminar Driver:

CASTFOREM	JANUS-A	JTLS	VIC
<u>Exercise Driver:</u>			
AWSIM	BBS-SIMNET-D(BDS-D)		CBS
CSSTSS	JANUS-A	JCM	JTLS
NAWSIM	TTSM		

C4I

Operational Tool/Decision Aid:

SOFPARS	TACWAR	WWMCCS/WAAM	
<u>Analysis Tool/Seminar Driver:</u>			
C3ISIM	CASTFOREM	EADSIM	GPALS
JANUS-A	JTLS	RESA	TACSIM
TACWAR	VIC	WWMCCS/WAAM	
<u>Exercise Driver:</u>			
BBS-SIMNET-D(BDS-D)		CBS	CSSTSS
EADSIM	JANUS-A	JCM	JTLS
TACSIM	TACWAR	TTSM	

TOOLS for LAM Issue Analysis

FY94 ISSUES

C4I

Operational Tool/Decision Aid:

SOFPARS	TACWAR	WWMCCS/WAAM
---------	--------	-------------

Analysis Tool/Seminar Driver:

C3ISIM	CASTFOREM	EADSIM	GPALS
JANUS-A	JTLS	RESA	TACSIM
TACWAR	VIC	WWMCCS/WAAM	

Exercise Driver:

BBS-SIMNET-D(BDS-D)		CBS	CSSTSS
EADSIM	JANUS-A	JCM	JTLS
TACSIM	TACWAR	TTSM	

Equipping

Operational Tool/Decision Aid:

ELIST	MASS	MIDAS
-------	------	-------

Analysis Tool/Seminar Driver:

CAMEX	CASTFOREM	COMO(T)	EADTB
EADSIM	EAGLE	ELIST	FDE
GDAS	GPALS	JANUS-A	JFAST
MIDAS	POPS	SIMNET-D(BDS-D)	TACSIM
TRANSMO	VIC		

Exercise Driver:

BBS	CAMEX	CBS	CSSTSS
EADTB	EADSIM	EAGLE(BDS-D)	ELIST
FDE	GPALS	JANUS-A	JCM
JFAST	SIMNET-T(CCTT)	TACSIM	

Sustainment

Operational Tool/Decision Aid:

ELIST	KBLPS	MASS	MIDAS
SEASTRAT			

Analysis Tool/Seminar Driver:

CEM	ELIST	FASTALS	LOGSAFE
MIDAS	POPS	SEASTRAT	STADSS
TRANSMO	VIC		

Exercise Driver:
CSSTSS ELIST

Deployable Forces

<u>Operational Tool/Decision Aid:</u>		
DART/MIDAS/TACWAR		OSD
DART/RAPIDSIM/JTLS		J8/J4
GDAS/TRANSMO/CEM		CAA
SABRE/DART-FORCEFLO/JFAST/ELIST/TACWAR		FORCOM/CINC
<u>Analysis Tool/Seminar Driver:</u>		
DART/MIDAS/TACWAR		OSD
DART/RAPIDSIM/JTLS		J8/J4
GDAS/TRANSMO/CEM		CAA
SABRE/DART-FORCEFLO/JFAST/ELIST/TACWAR-VIC		FORCOM/CINC
<u>Exercise Driver:</u>		
DART/MIDAS/TACWAR-CBS		OSD
DART/RAPIDSIM/JTLS-CBS		J8/J4
GDAS/TRANSMO/CBS		CAA
SABRE/DART-FORCEFLO/JFAST/ELIST/TACWAR-CBS		FORCOM/CINC

Space

<u>Operational Tool/Decision Aid:</u>			
MPRS	MSI	SOFPARS	SPEC2
<u>Analysis Tool/Seminar Driver:</u>			
C3ISIM	EADSIM	EADTB	GPALS
TACSIM	VIC		
<u>Exercise Driver:</u>			
CBS	EADSIM	GPALS	TACSIM

Continuous Operations

<u>Operational Tool/Decision Aid:</u>			
<u>Analysis Tool/Seminar Driver:</u>			
JANUS-A	JTLS	SIMNET-D(BDS-D) VIC	
<u>Exercise Driver:</u>			
BBS	CSSTSS/CBS	JANUS-A	JCM
JTLS	SIMNET-D(BDS-D)		

Weapons of Mass Destruction

Operational Tool/Decision Aid:

Analysis Tool/Seminar Driver:

AURA

CHEMCAS III

MACATACK

RSAS

Exercise Driver:

Deployment

Operational Tool/Decision Aid:

DART

ELIST

JOPEs

MASS

MOBCON

SEASTRAT

SITAP

STACCS

STRADS

TSAR

Analysis Tool/Seminar Driver:

DART

ELIST

FDE

FINDIT/FLOWIT

FORCEFLO

GDAS

JFAST

JTLS

MIDAS

POPS

RAPIDSIM

RSAS

SEASTRAT

SITAP

STRADS

TRANSMO

TSAR

Exercise Driver:

DART

ELIST

FDE

FORCEFLO

JFAST

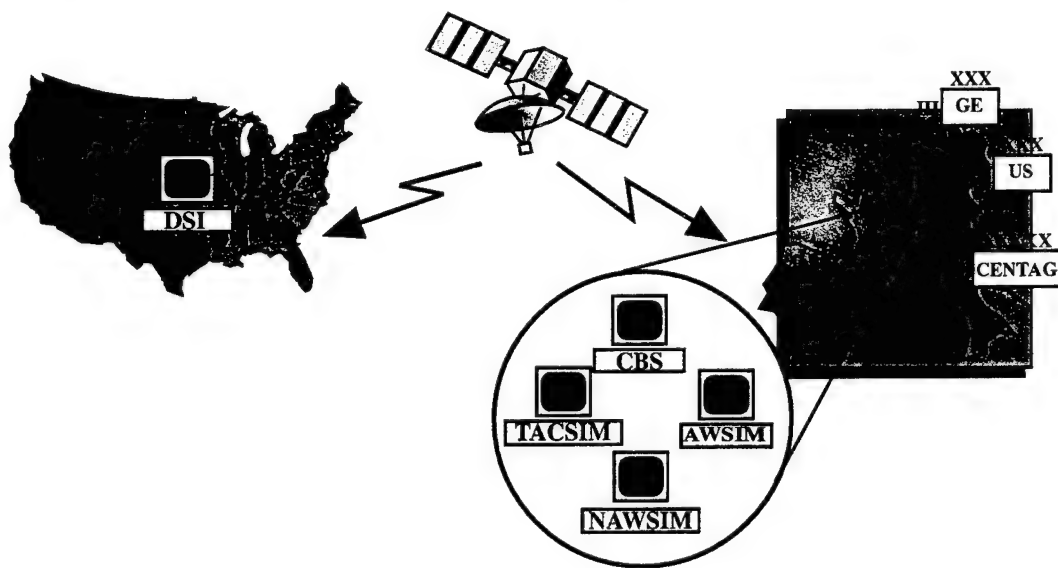
JTLS

RAPIDSIM

Exercise Linkages

C

The Power of the Microprocessor...



REFORGER '92



CBS

Corps Battle Simulation

- Ground Combat
- Movement
- Logistics
- SHORAD



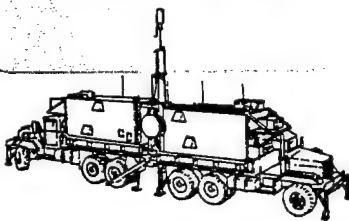
AWSIM

Air Warfare Simulation

- Air to Air
- Air to Ground
- High to Medium Altitude Air Defense

JECEWSI

Joint Electronic
Combat Electronic
Warfare Simulation



NAWSIM

Naval Warfare Simulation

- Sea to Ground
- Sea to Air
- Submarine
- Air to Air



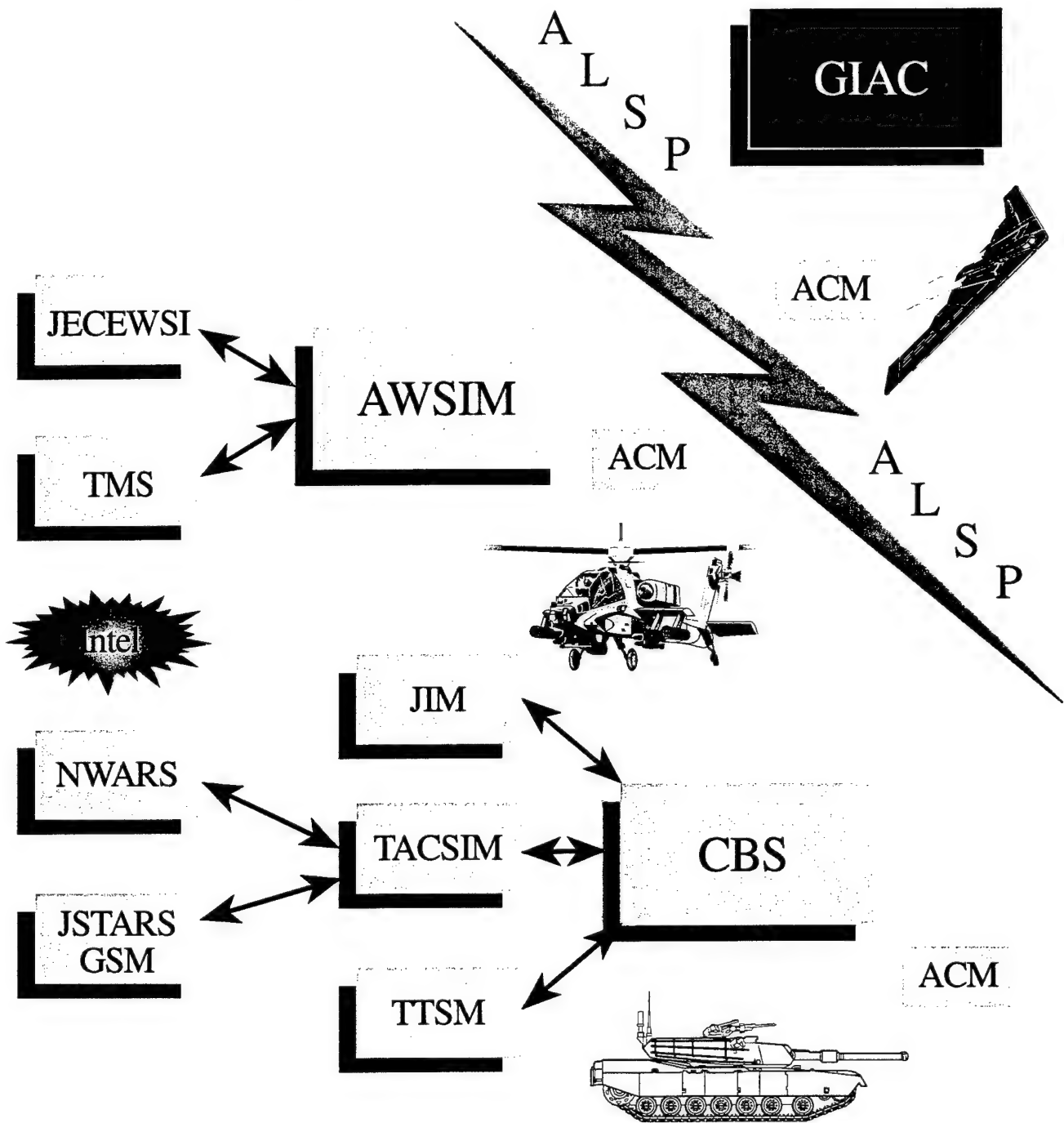
TACSIM BICM

Intelligence
Sensors

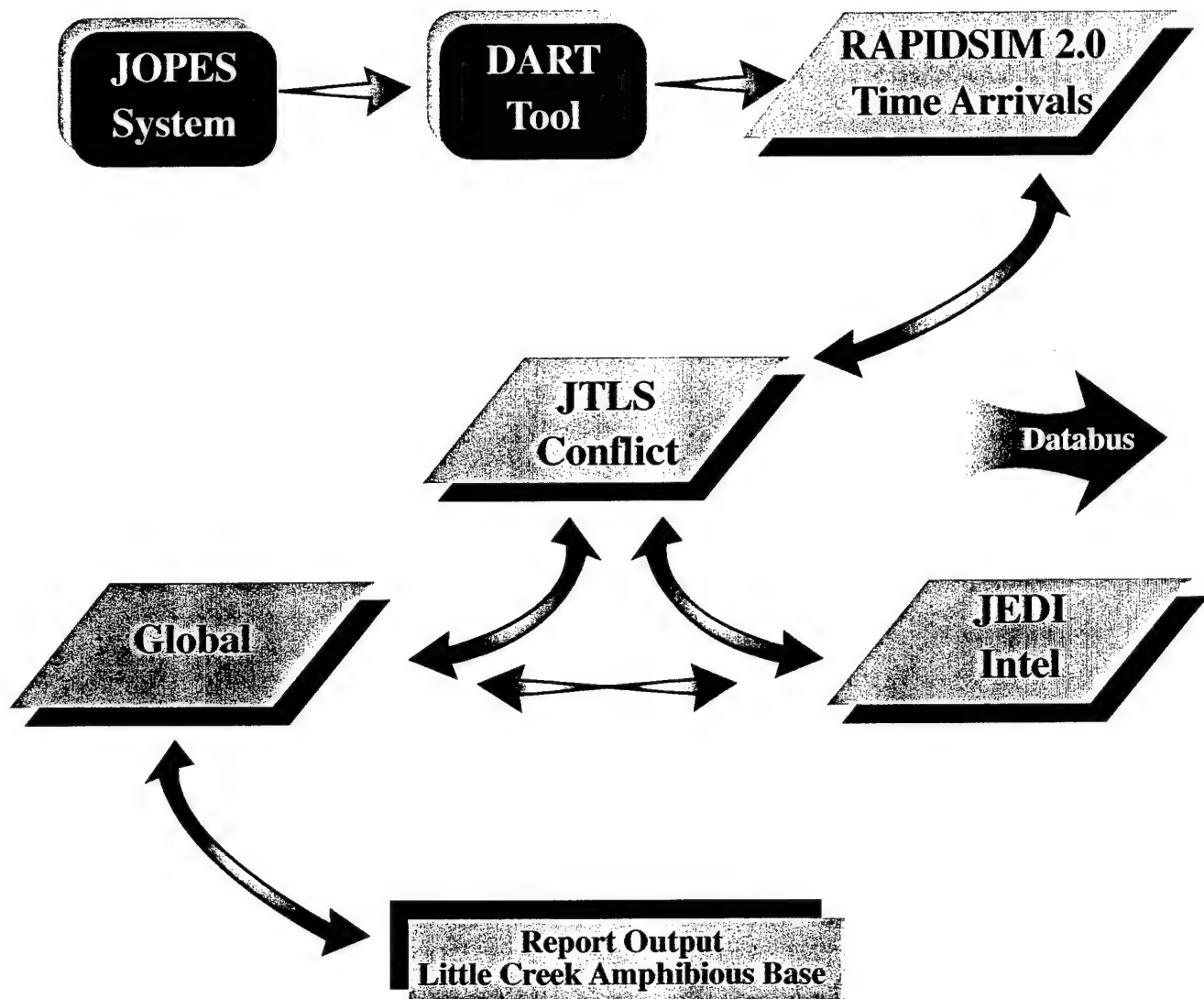


Joint
Combat

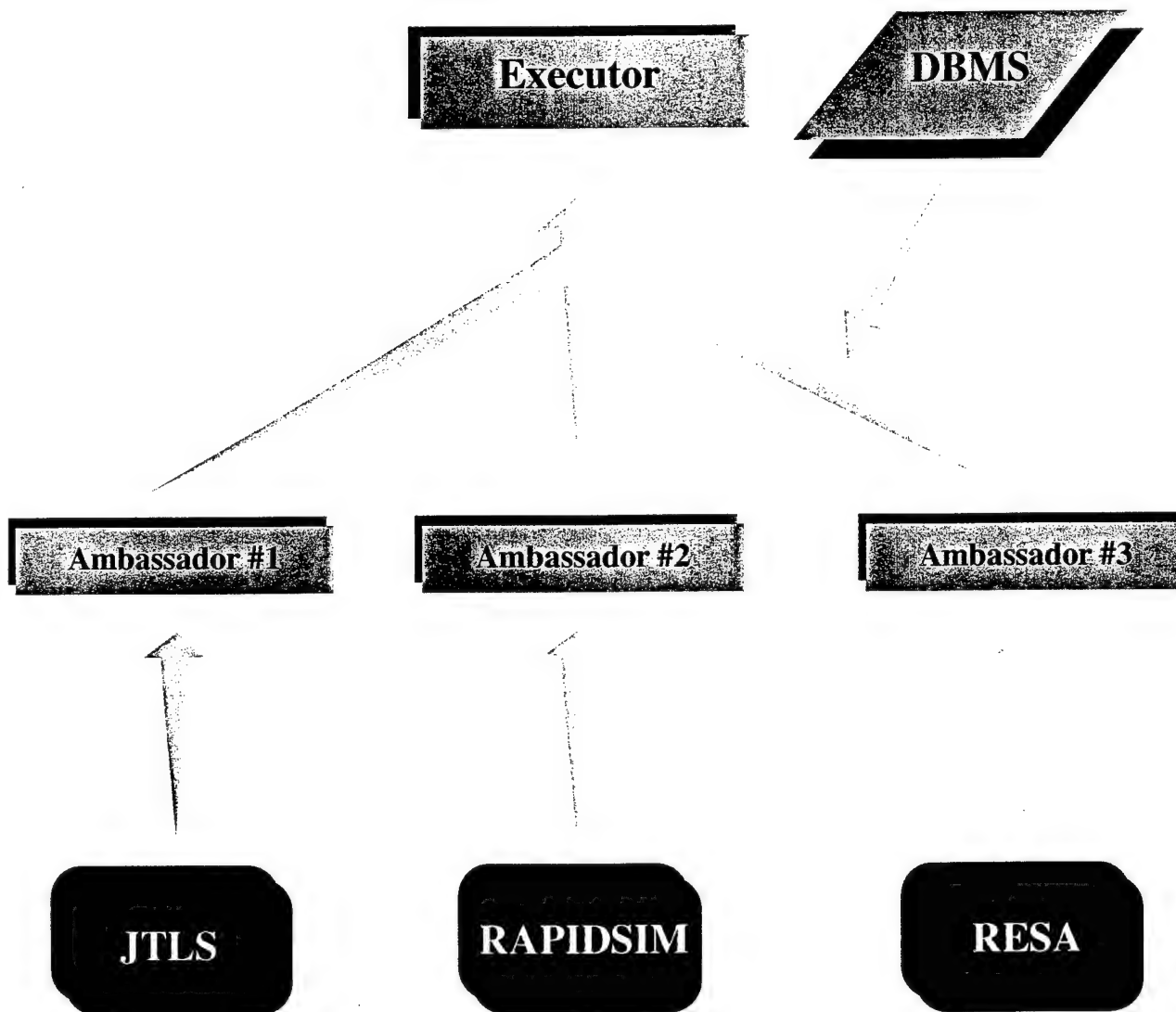
Ulchi Focus Lens '92
Model Interfaces



Spartan Base '92 Simulation Support System



Spartan Base '92 Database Protocol



LAM Model & Simulation FY 93 Funding \$3.4M*

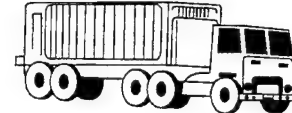


- Electronic links via
ALSP to...
✓ CBS (Oct '93)
✓ FAMSIM (Apr '94)

- Confederation monitor
(Apr '94)
✓ Work done by MRJ

All above - \$0.3M

- Course of action planning/
analysis tool
✓ Maneuver/CS/CSS
(Oct '93)
✓ \$TBD

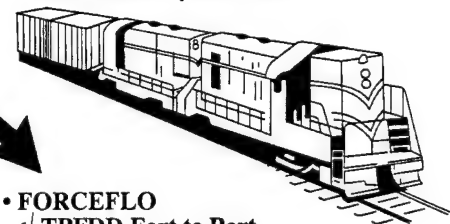


- Continent to continent deployment
✓ Due UFL '93 \$TBD
✓ Work done by TBD

- Naval Fire support (TLAM, etc.)
✓ Due UFL '93 \$TBD
✓ Work done by MITRE,
NRAD, CECOM, WPC

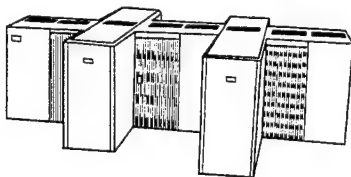
- CSS/TSS link to CBS
✓ Due UFL '94 \$0.25M
✓ Work done by CASCOT,
MITRE, JPL

- Core Support
✓ Due FY93 \$0.32M
✓ Work done by MITRE



- FORCEFLO
✓ TPFDD Fort to Port
✓ Requirements & COA Analysis
✓ Due Dec '93 \$0.5M
✓ Work done by CSC

- FORCEGEN
✓ Mobilization actions simulation
✓ Mob station to fort
✓ Due Dec '93 \$0.3M
✓ Work done by Argon Nat'l Lab



- GAC
- Analysis Workstation
- Video/movie replay
- Capability to monitor all
confederation models
- #Work done by WPC,
MITRE, and LANL

Demo due
REFORGER '93

Operational due
UFL '93

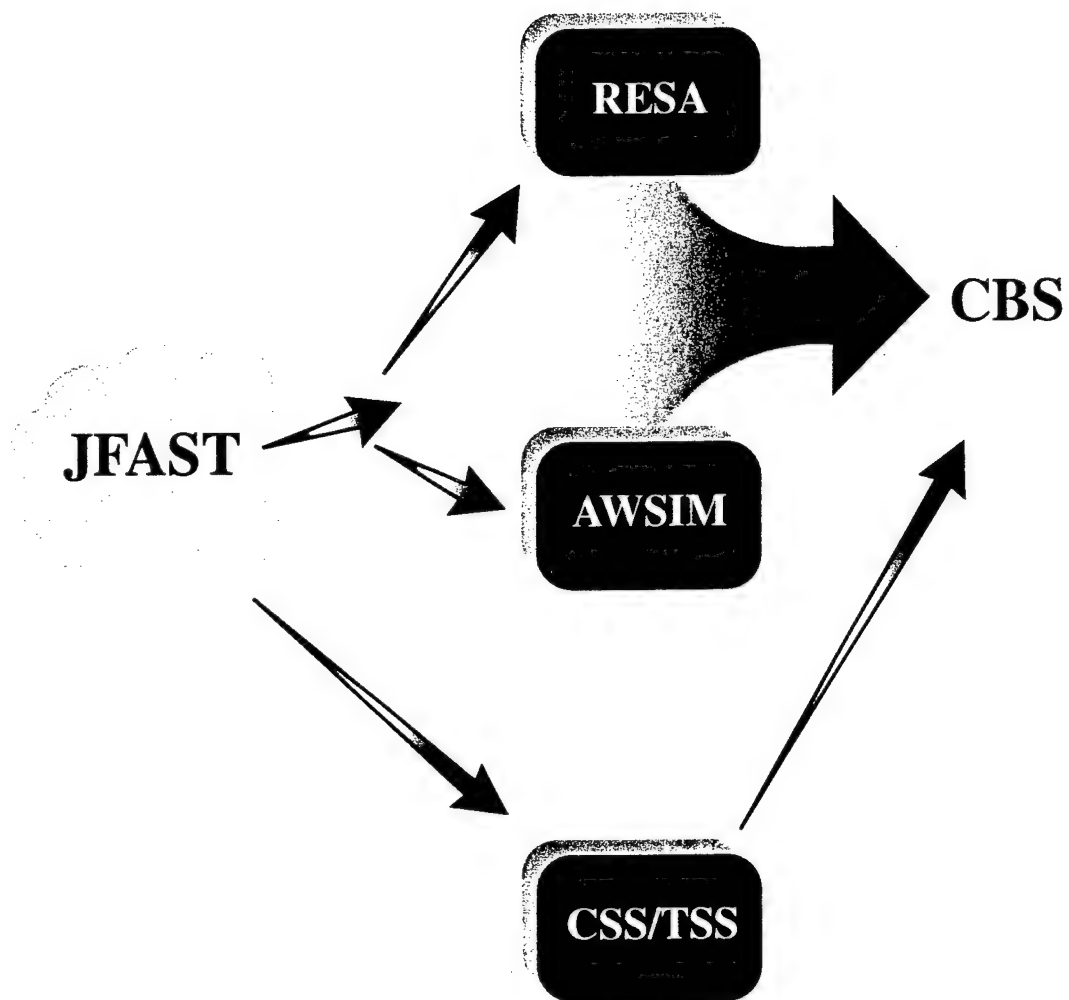
\$3.1M



- Confederation of models
- SIMNET (Flying Carpet)
- Analytical model
- Video playback
- Shared map planning
- GIAC
- All due May '93 Cost TBD

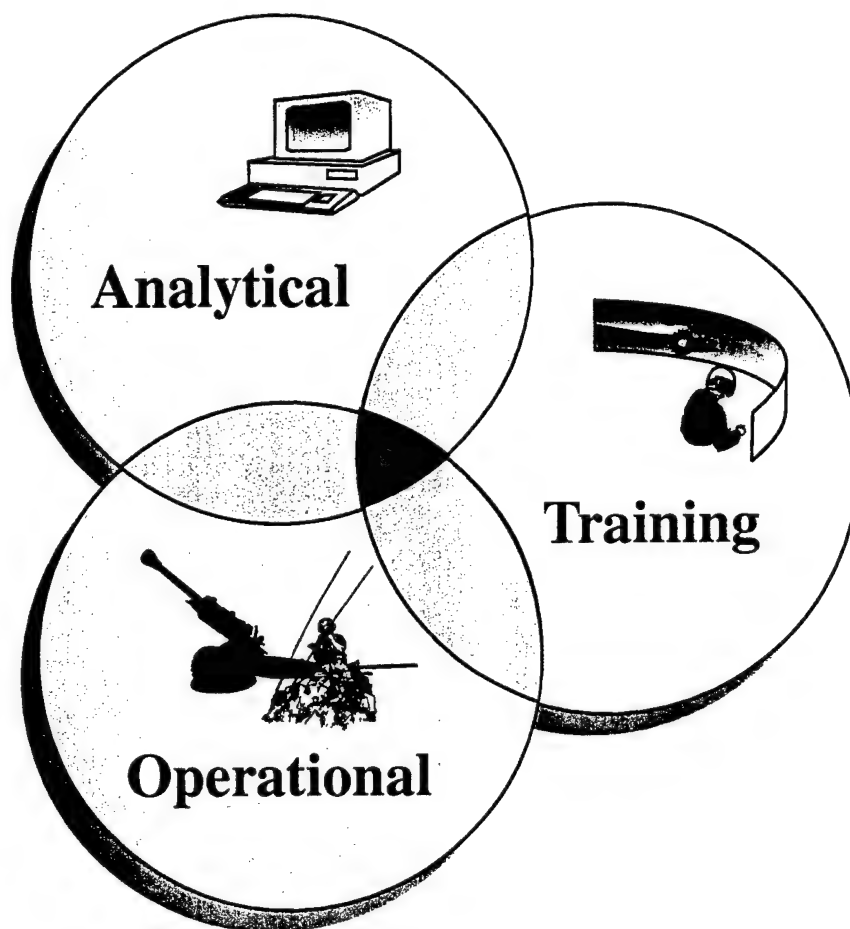
GHQx '94

Proposed Linkages



Glossary

D



AURA - Army Unit Resiliency Analysis.	D-1
AWSIM - Air Warfare Simulation.	D-1
BBS - Brigade/Battalion Battle Simulation	D-2
CAMEX - Computer Assisted Map Exercise.	D-2
CASTFOREM - Combat Arms Task Force Engagement Model.	D-3
CBS - Corps Battle Simulation	D-3
CEM - Concepts Evaluation Model	D-4
CHEMCAS III - Chemical Casualty III.	D-4
CMASS - Counterdrug Modeling and Simulation System.	D-4
COMO III - Air Defense Computer Modeling System.	D-5
COMO(T) - Computer Model	D-5
CSSTSS - Combat Service Support Training Simulation	D-6
DART - Dynamic Analysis and Replanning Tool.	D-6
DEPLOY - Deployment and Sustainment Model	D-7
EADSIM - Extended Air Defense Simulation	D-7
EADTB - Extended Air Defense Test Bed.	D-7
EAGLE - Corps/Division Analysis Model.	D-8
ELIST - Enhanced LIST.	D-8
FAPES - Force Augmentation Planning and Execution System.	D-9
FASTALS - Force Analysis Simulation of Theater Administrative and Logistics Support.	D-9
FDE - Force Deployment Estimator	D-10
FINDIT/FLOWIT.	D-10

FORCEFLO - Force Fort to Port.	D-11
FORCEGEN - Force Generation Model.	D-11
FORCEM - Force Evaluation Model.	D-12
GDAS - Global Deployment Analysis System.	D-12
GPALS - Global Protection Against Limited Strikes.	D-13
JANUS-A.	D-13
JCM - Joint Conflict Model.	D-14
JFAST - Joint Flow and Analysis System.	D-14
JIMPP - Joint Industrial Mobilization Planning Process.	D-14
JOPEs - Joint Operation Planning and Execution System.	D-15
JTLS - Joint Theater Level Simulation.	D-16
KBLPS - Knowledge-Based Logistics Planning Shell.	D-16
LIST - Logistics Intra-theater Support Tool.	D-17
LOGSAFE - Logistic Sustainability Analysis Feasibility Estimator.	D-17
MACATAK - Maintenance Capabilities Attack Model.	D-17
MAGTF II - Marine Air-Ground Task Force War Planning System II.	D-18
MASS - Mobility Analysis Support System.	D-18
MIDAS - Model for Intertheater Deployment by Air and Sea	D-19
MOBCEM - Mobilization Capabilities Evaluation Model	D-19
MOBCON - Mobilization Movement Control System.	D-20
MPM - Mobilization Policy Model	D-20
MPRS - Mission Planning and Rehearsal System	D-21
MSI - Multi-Spectral Imagery.	D-21

NAWSIM - Naval Warfare Simulation.	D-21
PEACE - Production Expansion/Acceleration Capability Enhancement.	D-22
POPS - Port Operational Performance Simulator.	D-22
RAPIDSIM - Rapid Intertheater Deployment Simulation Model.	D-23
RDSS-SNM - Regional Development Simulation System/Single Nation Model.	D-23
RESA - Research, Evaluation, and Systems Analysis Facility	D-23
RSAS - Rand Strategy Assessment System.	D-24
RSSIA - Regional Security Strategy Implementation Analysis.	D-24
SABRE - Single Army Battlefield Requirements Evaluator	D-25
SEASTRAT - Strategic Sealift Planning System.	D-25
SIMNET(BDS-D) - Simulation Network.	D-26
SIMNET(CCTT)	D-26
SITAP - Simulation for Transportation Analysis and Planning.	D-26
SOFPARS - Special Operations Forces Planning and Rehearsal System.	D-27
SPEC - Space Environmental Compatibility Model.	D-27
SPEC2 - Space Enhanced Command and Control	D-28
STACCS - Standard Theater Army Command and Control System.	D-28
STADSS - Strategic Transportation Analysis Decision Support System	D-29
STRADS - Strategic Deployment System.	D-29
TACSIM - Tactical Simulator	D-30
TACWAR - Tactical Warfare.	D-30
TAM - Theater Analysis Model	D-30
TM3 - Trade off Mobilization Macro Model.	D-31

TRANSMO - Transportation Model	D-31
TSAR - TRANSCOM Siting and Readiness.	D-32
TTSM - Theater Transition and Sustainment Model.	D-32
VIC - Vector In Commander	D-32
WAAM - Worldwide Military Command and Control System (WWMCCS) Allocation and Assessment Model	D-33
WWMCCS/WAAM - Worldwide Military Command and Control System/Allocation and Assessment Model.	D-33

AURA - Army Unit Resiliency Analysis.

DATE IMPLEMENTED: 1980.

MODEL TYPE: Analysis and training.

PROPOSER: Ballistic Research Laboratory, Vulnerability/-Lethality Division,
Aberdeen Proving Ground, MD 21005-5066.

POINT OF CONTACT: Stephanie Juarascio, (301) 278-6341, DSN 298-6341.

PURPOSE: The AURA model may be used both as a research and evaluation tool and an operation support tool. Its primary outputs consist of personnel and equipment losses, identification of weak links within the unit structure, and unit effectiveness. As a research and evaluation tool it has been used extensively to study the effectiveness of weapon systems against targets and could be applied to the problem of assessing the most efficient mix of munitions types against particular targets. It has also been used as a tool to assess the impact of TO&E force structure changes on a unit effectiveness. It provides the flexibility to model the effects of cross-training and the various methods of task accomplishment which make it applicable for use in resource planning. As an operations support tool, the model has been used to generate casualty assessments in support of field operations. The model has also been used to provide information for field training exercises to drive the synchronization of replacement support decisions.

AWSIM - Air Warfare Simulation.

DATE IMPLEMENTED: 1988.

MODEL TYPE: Training and education.

PROPOSER: HQ USAFE Warrior Preparation Center (WPC), Einsiedlerhof Air Station, Einsiedlerhof, Germany APO AE 09094-5000.

POINT OF CONTACT: Maj. Ed Poniatowski, (49) 631-536-6507, DSN 489-6507.

PURPOSE: AWSIM is designed to help train senior NATO commanders and their battle staffs in the execution of wartime general defense plans that emphasize joint and combined operations. The model is used for team skills development and as a non-scripted command post exercise driver.

BBS - Brigade/Battalion Battle Simulation.

DATE IMPLEMENTED: 1988.

MODEL TYPE: Training and education.

PROPONENT: Combined Arms Command-Training (CAC-TNG), National Simulation Center (NSC), Ft Leavenworth, KS 66027-7301.

POINT OF CONTACT: MAJ Lehnherr, (913) 684-3189, DSN 552-3189.

PURPOSE: To provide battalion and brigade commanders and their staffs an environment to train in the execution of AIRLAND battle doctrine at the tactical level of war. BBS is used primarily as a Command Post Exercise (CPX) driver.

DESCRIPTION: BBS is a system of computers networked together to provide the driver for CPX or command staff training. The simulation operates as a two-sided, free play, real-time training environment. The system plays air and ground warfare between opposing units and the resupply, medical, and maintenance required to support the conflict. It is a high resolution model which represents weapon and support systems at the item level.

CAMEX - Computer Assisted Map Exercise.

DATE IMPLEMENTED: 1991.

MODEL TYPE: Analysis.

PROPONENT: US Army TRADOC Analysis Command (TRAC), Fort Leavenworth KS.

POINT OF CONTACT: Mr. Ken Pickett, Director, Model Dir., TRAC-OAD, DSN: 552-4595, (913) 684-4595.

PURPOSE: CAMEX is based on the Vector-In-Command (VIC) model/methodology. It is used to wargame a contingency theater. It is a computer assist system that assesses movement, fire support, air defense, and mobility/survivability. It is designed to improve concept development, capture operational insights, and improve VIC gaming. A scenario and doctrinal analysis tool.

CASTFOREM - Combat Arms Task Force Engagement Model.

DATE IMPLEMENTED: 1983.

MODEL TYPE: Analysis.

PROPONENT: TRADOC Analysis Command, White Sands Missile Range (TRAC-WSMR), White Sands Missile Range, NM 88002-5502.

POINT OF CONTACT: C. Denney, (505) 678-1881, DSN 258-1881.

PURPOSE: CASTFOREM is used for weapon system and tactics evaluation in brigade and below combined arms conflicts. Primarily intended to model intense Battalion-level battles up to one hour in length. Very high resolution for conventional and directed energy weapon system with resolution to the item system level. Processes are modeled probabilistically using Monte Carlo techniques. Combined arms ground conflicts (support helicopters, limited fixed-wing and air defense, and dismounted fire teams). Conventional warfare with limited chemical and nuclear effects. Directed energy weapons, including lasers and high-powered microwave are modeled. Extremely flexible; can accommodate any terrain or weapon system for which data is available. Uses digitized terrain data. Weather and ambient light conditions are constant throughout the battle. Battlefield obscurants, smoke, and dust are modeled as dynamic clouds.

CBS - Corps Battle Simulation, Version 1.3.5; formerly known as Joint Exercise Support System (JESS).

DATE IMPLEMENTED: 1985.

MODEL TYPE: Training wargame.

PROPONENT: U.S. STRICOM, Training Devices (formally PM TRADE), Orlando, FL.

POINT OF CONTACT: STRICOM, P. Spangler, Project Director (407) 380-4309; Combined Arms Command-Training (CAC-T) Fort Leavenworth, MAJ D. Carrol, CBS Project Development Officer (913) 684-3180.

PURPOSE: CBS is the Corps/Division command and staff trainer in the Army's Family of Simulations (FAMSIM). Its primary use is as a CPX driver. It is used by the Battle Command Training Program (BCTP) and by the corps to train corps, division, and brigade staffs. CBS is also used by BCTP as a seminar trainer.

CEM - Concepts Evaluation Model.

DATE IMPLEMENTED: 1974.

MODEL TYPE: Analytical.

PROPONENT: U.S. Army Concepts Analysis Agency, Bethesda, MD.

POINT OF CONTACT: William T. Allison, (DSN) 295-5236 or (301) 295-5236.

PURPOSE: CEM is used primarily to analyze force effectiveness at theater level warfare. It is designed to provide a tool to assess the effectiveness of different mixes of forces and resources and to estimate ammunition, equipment, and personnel requirements.

CHEMCAS III - Chemical Casualty III.

DATE IMPLEMENTED: 1988.

MODEL TYPE: Analysis.

PROPONENT: United States Army Chemical School (USACMLS), ATTN: ATZN-CM-CC, Ft. McClellan, AL 36205-5020.

POINT OF CONTACT: Mr. Tom Collins/CPT Michael O. Kierzewski, (205) 848-3174/3659, DSN 865-3174/3659.

PURPOSE: CHEMCAS III is used to analyze weapons systems effectiveness against targets. It determines casualties and provides quantitative estimates of agent deposition and dosage levels on target. CHEMCAS III is used primarily to compare various weapons systems and to be a casualty levels feeder model for larger force-on-force models. The dosage and deposition effects are actually calculated by the NUSSE III model used as a module for CHEMCAS III.

CMASS - Counterdrug Modeling and Simulation System.

DATE IMPLEMENTED: 1992.

MODEL TYPE: Training and education.

PROPONENT: USCINCSO, SCJ5.

POINT OF CONTACT: Mr. Larry Blotzer, x3050 or Mr. George Hause, DSN: 878-1547.

PURPOSE: CMASS is a CINCSO initiative with an goal of predictive intelligence for counterdrug operations. It models drug development and its industrial process. It is used with professional red team to drive an exercise based on the interaction between agencies and nations.

COMO III - Air Defense Computer Modeling System.

DATE IMPLEMENTED: 1986.

MODEL TYPE: Analysis.

PROPONENT: Systems Analysis and Evaluation Office, U.S. Army Missile Command, Redstone Arsenal, AL 35898-5060.

POINT OF CONTACT: Charles E. Colvin, (205) 876-1333, DSN 746-1333.

PURPOSE: COMO III is a general-purpose critical event modeling system designed for the writing and development of air defense simulations. It is used to evaluate the operational effectiveness of air defense weapon systems in a realistic tactical scenario. COMO III is used as a research and development tool and an operations support tool.

COMO(T) - Computer Model.

DATE IMPLEMENTED: 1984.

MODEL TYPE: Analysis.

PROPONENT: USAADASCH, ATTN: ATSA-CSD-CM, Ft. Bliss, TX 79916-0002.

POINT OF CONTACT: Mr. Tom Crow, DSN 978-2304.

PURPOSE: COMO is used primarily for air defense systems effectiveness analysis, but may be used to perform analysis in the areas of systems development, mix, doctrine, deployment, and employment.

CSSTSS - Combat Service Support Training Simulation System. Version 1.0.

DATE IMPLEMENTED: None.

MODEL TYPE: Training and Education.

PROPONENT: U.S. Army Combined Arms Support Command; Attn: ATCL-LTJ,
Fort Lee, VA 23831.

POINT OF CONTACT: Mr. Al Damour, DSN 687-4822, Commercial (804) 734-4822
and/or Mr. Joe Riley, DSN 687-5993, Commercial (804) 734-5993.

PURPOSE: CSSTSS 1.0 is an exercise driver used to stimulate exercise play for the collective training of AC and RC commanders and staff personnel in command, control and communications. The training audience includes the CSS commanders and staffs in Echelons Above Corps, Corps Support Commands, and Division Support Commands as well as their subordinate headquarters. CSSTSS 1.0 initial product is used as a Command Post Exercise Driver. Subsequent CSSTSS products will be used as Command and Staff Trainers and Seminar Trainers.

DART - Dynamic Analysis and Replanning Tool.

DATE IMPLEMENTED: 1992.

MODEL TYPE: Operational and Planning.

PROPONENT: Office of the Joint Chief of Staff, J7, or HQ USATRANSCOM, J5.

POINT OF CONTACT: LTC Rawcliffe, DSN 576-5111/5109.

PURPOSE: DART is a courses of action development and analysis tool. It provides the capability to organize, reorder, re-sequence and reschedule Time Phased Force and Deployment Data (TPFDD). It provides software that reduces the time for Joint Operations Planning and Execution System (JOPEs) work from days to minutes, complementing the capabilities of JOPEs. DART is prototype to ten sites (Jan 92, CENTCOM, PACOM, etc.). TRANSCOM is linking DART to JFAST.

DEPLOY - Deployment and Sustainment Model.

DATE IMPLEMENTED: 1983.

MODEL TYPE: Training and education.

PROPONENT: War Gaming and Simulation Center, Institute for National Strategic Studies, National Defense University (NDU-NSS-WGSC) Ft. McNair, Washington, DC 20319-6000.

POINT OF CONTACT: R.D. Wright, (202) 475-1251, DSN 335-1251.

PURPOSE: To illustrate logistical constraints in deployment and employment planning. The model provides quick (less than five minutes) feasibility checks and tradeoff analyses for aggregate force deployments in support of academic exercises. Users balance theater requirements with available lift, set tradeoffs between unit arrivals and stock buildups and between deployed force elements and support slices.

EADSIM - Extended Air Defense Simulation.

DATE IMPLEMENTED: 1989.

MODEL TYPE: Analysis.

PROPONENT: Joint Theater Missile Defense Program Office (JTMDPO), United States Army Strategic Defense Command (USASDC), P.O. Box 1500, Huntsville, AL 35807-3801.

POINT OF CONTACT: Mr. Raymond Washburn, DSN 645-1562, Com (205) 955-1562.

PURPOSE: EADSIM is used primarily to analyze theater-level Extended Air Defense scenarios. It is specifically designed to evaluate effectiveness and efficiency of weapons systems against targets and to evaluate the value of different mixes of forces or resources.

EADTB - Extended Air Defense Test Bed.

DATE IMPLEMENTED: 1993 (Projected).

MODEL TYPE: Analysis.

PROPONENT: Joint Theater Missile Defense Program Office (JTMDPO), United States Army Strategic Defense Command (USASDC), P.O. Box 1500, Huntsville, AL 35807-3801.

POINT OF CONTACT: LTC Alan R. Hammond, DSN 645-4954, Commercial (205) 955-4954.

PURPOSE: EADTB will be used primarily to analyze theater-level Extended Air Defense scenarios. It is being specifically designed to evaluate effectiveness and efficiency of weapons systems against targets and to evaluate the value of different mixes of forces or resources.

EAGLE - Corps/Division Analysis Model.

DATE IMPLEMENTED: N/A. Eagle is currently being developed. Estimated completion data is late 1993.

MODEL TYPE: Analysis and training.

PROPONENT: TRAC-FLVN, Fort Leavenworth, KS 66027-5200.

POINT OF CONTACT: Mr. Kent Pickett, (913) 684-4016.

PURPOSE: This effort will develop a fast-running systemic simulation for use by combat development studies involving new doctrine, scenario development, and future concept analysis. Eagle is designed for corps/division-level of analysis using object-oriented design, artificial intelligence, and state-of-the art software development tools. It will also serve the training community as a seminar exercise driver training tool.

ELIST - Enhanced LIST.

DATE IMPLEMENTED: Under development.

MODEL TYPE: Analysis and Planning.

PROPONENT: US MTMC-TEA, Newport News, VA and Argonne National Lab.

POINT OF CONTACT: Mr. Ken Matthews, MTMC-TEA, Newport News, VA, DSN: 927-1619 or Mr. Peter Campbell (ANL, (708)252-5464).

PURPOSE: Improvements in LIST in the area of, the logistics modeling, planning, and logistics knowledge. Treatment of degradation and attrition node, link, and asset capability; pre-positioned assets (land and sea) and procedures for marry-up of units and pre-positioned assets. Host nation support capabilities, agreements, and constraints and modeling TPFDD and replanning from given state.

FAPES - Force Augmentation Planning and Execution System.

DATE IMPLEMENTED: 1991

MODEL TYPE: Planning and Analysis.

PROPONENT: Office of the Joint Chief of Staff, J4, Logistic Planning Division.

POINT OF CONTACT: COL. Larson, DSN: 227-5469, (202) 699-5469.

PURPOSE: The Force Augmentation Planning and Execution System (FAPES) is being developed as a military mobilization planning and execution system to capture and integrate manpower planning capabilities for both deliberate and crisis situations. The requirement for FAPES is established in the Joint Operation Planning and Execution System (JOPES) Statement of Required Operational Capability (ROC), and is further described in the JOPES Concept of Operations and JOPES Support Elements. FAPES is designed to determine if force augmentation is necessary to satisfy time-phased requirements specified in deployment, employment, and sustainment planning. Monitoring the status and progress of manpower mobilization is key to this process. FAPES was used extensively during Exercise PROUD EAGLE 90. Aggregated data displayed for the decision maker verified the requirement for a top-down strategic view of mobilization.

FASTALS - Force Analysis Simulation of Theater Administrative and Logistics Support.

DATE IMPLEMENTED: 1971.

MODEL TYPE: Analytical.

PROPONENT: U.S. Army Concepts Analysis Agency.

POINT OF CONTACT: Mr. Raymond McDowall, DSN 295-0027 or (301) 295-0027.

PURPOSE: The objective of FASTALS is to develop the balanced, time-phased support force requirements for a specified combat force. FASTALS is used primarily for force planning studies and analysis generally in the context of the Defense Guidance Illustrative Planning Scenario (DGIPS).

FDE - Force Deployment Estimator.

DATE IMPLEMENTED: First prototype delivered December 1990. Second prototype anticipated October 1992.

MODEL TYPE: Analysis.

PROPONENT: Force Structure, Resource, and Assessment Directorate (J-8), The Joint Staff, The Pentagon, Room 1D940, Washington, DC 20318-8000

POINT CONTACT: Ground Forces Branch, J8, CFAD, DSN: 224-4767, (703) 614-4767.

PURPOSE: FDE is a force deployment/closure model that runs on the SUN SPARC 2 computer written in Fortran 77 (Ingres, X-windows). This model assess feasibility of a desired contingency deployment of ground, sea, and air and their sustainment world wide. Transport options, port restrictions and available lift are all played. Theater or multitheater, combination of civil and military transportation (aircraft, ships, rail, trucks, etc.) is included. The model uses discrete event simulation, goal programming, and annealing techniques. Graphical output with best solution options are presented for consideration. Looks to be a timely model for LAM for an assessment of the "big picture".

FINDIT/FLOWIT.

DATE IMPLEMENTED: 1991.

MODEL TYPE: Analysis.

PROPONENT: HQDA, Office of the Deputy Chief of Staff for Logistic (DALO-TSM), Pentagon, Washington DC.

POINT OF CONTACT: .

PURPOSE: FINDIT/FLOWIT is a real-time tool/model to perform "what if" on transportation capabilities.

FINDIT-quickly locate and store unit level data, unit size and shipping requirements vis ship or plane. It features a detailed, up to date database of UIC with contingency force pools for CSS to provide the user with supportable force assembly sets. User provides the tooth and Findit automatically provides the tail.

FLOWIT-enables users to simulate the deployment of a given fighting force. Flowit supports the ability to create multiple mobilization scenarios and evaluated with ship utilization, closure dates.

FORCEFLO - Force Fort to Port.

DATE IMPLEMENTED: 1993

MODEL TYPE: Planning and Analysis

PROPONENT: HQ Forces Command (FORSCOM), J5, Fort McPherson, GA.

POINT OF CONTACT: Mr. Allen J. Haas, Chief, Assessment and Analysis, DSN: 367-5592, (404) 669-5592.

PURPOSE: FORCEFLO is an tool to project unit ability to meet the available to load date (ALD) on the TPFDD. The model simulates the Fort to Port part of the mobilization function. The model provides detailed analysis of unit movement capability as units move through the critical installation to the sea/air ports leading to strategic deployment. Version 2.0 of FORCEFLO is now available.

FORCEGEN - Force Generation Model.

DATE IMPLEMENTED: Underdevelopment/Expected FY94'

MODEL TYPE: Operational and Planning.

PROPONENT: HQ Forces Command (FORSCOM), J5, Fort McPherson, GA.

POINT OF CONTACT: Mr. Allen J. Haas, Chief, Assessment and Analysis, DSN: 367-5592, (404) 669-5592

PURPOSE: FORCEGEN is a force generation model that will assist in determining the right mix (joint deployment) of the total force: Active, Reserve and National Guard. FORCEGEN is currently underdevelopment for FORSCOM and will not be available until after Nov 93 or later (as late as Jan 95). Argonne National Laboratory (ANL) is currently designing the FORCEGEN model.

FORCEM - Force Evaluation Model.

DATE IMPLEMENTED: 1985.

MODEL TYPE: Analytical.

PROPONENT: U.S. Army Concepts Analysis Agency.

POINT OF CONTACT: Dr. R. Johnson, (DSN) 295-1593 or (301) 295-1593.

PURPOSE: The model provides simulation of airland activities in a theater of operations over an extended period (up to 90 days). Combat operations are at the division level and most of the combat support and combat service support functions from the port to FLOT are represented. It is a fully computerized simulation for application in studies and analyses of force planning and resource allocation issues. The model is part of a three level hierarchy of Army simulation models (at Battalion, Division/Corps and Theater) developed under the Army Model Improvement Program.

GDAS - Global Deployment Analysis System.

DATE IMPLEMENTED: 1993

MODEL TYPE: Analysis.

PROPONENT: US Army Concept Analysis Agency (CAA), Bethesda, MD.

POINT OF CONTACT: Mr. Mackie or CPT Vance, DSN: 295-1656/1657.

PURPOSE: GDAS is a deployment model, from home station to employment (mobilization planning, strategic planning, theater planning and up to employment of the force). A much wider range of deployment than TRANSMO (port to port). Dynamic programming algorithms are used to program trade-off for airlift vs. sealift.

Maintains linkages between combat and support units. Added new node/links capability, plays delays, disables as well as forces cargo onto a single ship as required by user/controller. PC based model with graphical outputs (arrival time vs. req.). Expected completion date: Sep/Nov 92, but testing and database development is required (start-up time). Expected first use in summer 93.

GPALS - Global Protection Against Limited Strikes.

DATE IMPLEMENTED: 1991.

MODEL TYPE: Analysis and assessment.

PROPONENT: PEO GPALS, Huntsville, AL.

POINT OF CONTACT: Ms. Joyce Satterfield, SDC, DSN: 645-3904, Huntsville, AL.

PURPOSE: GPALS is a collection of simulations and tools that PEO GPALS has developed in order to assess and evaluate space system. These space systems are Global missile defense, National missile defense, and Theater missile defense potential systems. GPALS is able to simulate interceptors, BM/C3, sensors, early warning, and the environment.

JANUS-A.

DATE IMPLEMENTED: 1988.

MODEL TYPE: Training and Analysis (combat development).

PROPONENT: TRADOC Analysis Command (TRAC), White Sands Missile Range, NM and Combined Arms Command-Training, ATTN: ATZL-CTS-BB, Ft. Leavenworth, KS 66027-7301 or TRAC-WSMR.

POINT OF CONTACT: LTC G. Nance/MAJ M. Lehnherr, DSN: 552-3189/3395, Commercial (913) 684-3189 or Mr. Lee Kirby, TRAC-WSMR, DSN: 258-4949.

PURPOSE: Analysis (CD) - Model undertakes analytical studies of both current and new doctrine, related to strategy, policy and weapon system development. Training - Primary mission, trains battalion level and below in battle focused training to enable junior leaders to synchronize the battlefield. Secondary mission is to function as a seminar exercise driver for the tactical commanders development program.

JCM - Joint Conflict Model.

DATE IMPLEMENTED: 1992.

MODEL TYPE: Training.

PROPONENT: Joint Warfare Center, Hurlburt Field, FL 32544.

POINT OF CONTACT: Major Merryman, DSN: 579-7356, COMM:
(904) 884-7356.

PURPOSE: JCM is an interactive, multi-level, two sided game created to explore relationship of combat and tactical processes - using a standalone, event sequenced, stochastic, computer simulation. It models fighting systems and entities from U.S.S. Kittyhawk aircraft-carrier, M-1 Abrams tank, and F-15 Strike Eagle fighter. It provides a training environment for commanders and staffs as well as an investigation tool for new weapon systems/technology.

JFAST - Joint Flow and Analysis System.

DATE IMPLEMENTED: 1992.

MODEL TYPE: Analysis and Planning.

PROPONENT: US Transportation Command (TRANSCOM).

POINT OF CONTACT: LTC Fred Rawcliffe, USATRANSCOM, DSN: 576-5111.

PURPOSE: JFAST is a model that assesses the air, land and sea flow to closure. Airlift is modeled by individual airplane type for DOD aircraft, and by generic airplane type for CRAF. Transforms TPFDD cargo to cargo categories and calculates the number of railcars, truck, etc. needed for transport from origins to SPOEs.

JIMPP - Joint Industrial Mobilization Planning Process.

DATE IMPLEMENTED: 1993 (Under Development).

PROPONENT: Institute for Defense Analyses, Alexandria, VA 22311-1772

POINT OF CONTACT: Mr. A Martin Lidy, (703) 845-2411, DSN: 289-1946.

PURPOSE: JIMPP is designed to assess the industrial mobilization process in defense planning. It linking the CINC's warfighting needs with the capabilities of the industrial base in order to support military strategies. Industrial Preparedness (Vendor Level Analyses, and Industry Level Analyses) for assessing the industrial base to the Logistics requirements. Stockpile resizing is one of the issues that JIMPP will address. Analytical tools are:

Requirements Module produces weapons etc. associated with an operational concept/deployment.

Vendor Level Module produces production rates weapons based on prime vendors data.

Industry Level Module performs a broader sector analysis on mobilization requirements.

Stockpile Module estimates material requirement in order to support industry.

JOPEs - Joint Operation Planning and Execution System.

DATE IMPLEMENTED: 1988

MODEL TYPE: Planning and Operations

PROponent: Office of the Joint Chief of Staff, J4, Pentagon, Washington DC.

POINT OF CONTRACT: LTC. William Finnicum (Joint Staff/J4), (703) 697-0307, DSN: 227-0307.

PURPOSE: JOPEs support planning, execution, and monitoring of military actions. The system incorporate mobilization, deployment, employment, and sustainment. Critical items, that are not fully stocked, and cannot be produced in sufficient quantities are sometimes referred to as "war stoppers". This will be a complete planning system from initiation, concept development, plan development, plan review, and supporting plans. The last phase (V) will link industrial production to OPLAN execution where feasible and necessary. IMCJOPEs links the CJCS to CINCs for OPLAN. JOPEs is a system composed of two systems; Joint Operation Planning System (JOPS) and the Joint Deployment System (JDS). It uses the WWMCCS system and develops Time Phased Force Deployment Data (TPFDD) in support of operations. JOPEs is an integrated, conventional command and control system

designed primarily to satisfy the information needs of senior-level decision makers in conduction joint planning and operations. JOPEs is used to monitor, plan and execute mobilization, deployment, employment, and sustainment activities. According to a number of individuals JOPEs version 4 has fail it User Test (Feb 1992).

JTLS - Joint Theater Level Simulation.

DATE IMPLEMENTED: 1983, with continuous functional upgrade since then.

MODEL TYPE: Analysis.

PROponent: Joint Warfare Center, Hurlburt Field, FL 32544.

POINT OF CONTACT: Major Bernie Wisthoff, (904) 884-7355, DSN 579-7355 and LCDR N.L. Deitch, (J-8), (703) 695-1762; DSN 225-1762.

PURPOSE: Primarily to analyze theater-level operations plans. Designed as operations support and force capability tool for evaluating different mixes of forces or resources; also provides high-resolution play for exercises and seminar wargames.

KBLPS - Knowledge-Based Logistics Planning Shell.

DATE IMPLEMENTED: 1991.

MODEL TYPE: Analysis.

PROponent: Human Engineering Lab, Aberdeen Proving Ground, MD.

POINT OF CONTACT: Mr. Rick Camden, HEL, DSN: 298-5867.

PURPOSE: KBLPS incorporates sophisticated AI-based algorithms to assist the logistician in planning conventional ammunition distribution and inventories. The logistics planner can use the conventional ammunition distribution planner to solve resupply problems, using the knowledge base incorporated within the system. The planner can reason about such considerations as requirements, the capabilities of ammunition and transportation units, the capacities of main supply routes, resupply priorities, and the rule of thumb normally employed as an ammunition planner.

LIST - Logistics Intra-theater Support Tool.

DATE IMPLEMENTED: 1991.

MODEL TYPE: Assessment and Planning.

PROPONENT: US Military Traffic Management Command - Transportation Engineering Agency (MTMC-TEA), Newport News, VA.

POINT OF CONTACT: Mr. Ken Matthews, MTMC-TEA, (804) 599-1619, DSN: 927-1619.

PURPOSE: LIST is a prototype decision support system for evaluating the logistical feasibility of a course of action (COA). The system assists an analyst in determining whether a course of action is feasible given a theater's infrastructure and strategic sea and air lift allocations. LIST will answer the following questions: Is the COA logistically feasible?, Where are the potential bottlenecks that could cause it to become infeasible?, Where are the bottlenecks that, if relieved, could improve feasibility? Map interface is included, LIST is written in Prolog and C and runs on a Sun 4 workstation with minimum of 12 megabytes of memory. LIST is a combination of expert system technology and object oriented database structures with traditional methods, such as simulation and optimization modeling.

LOGSAFE - Logistic Sustainability Analysis Feasibility Estimator.

DATE IMPLEMENTED:

MODEL TYPE: Analysis.

PROPONENT: Office of Joint Chief of Staff, J4.

POINT OF CONTACT: LTC. L. King, OJCS/J4, (703)697-6110.

PURPOSE: LOGSAFE is an Estimator (sustainment/feasibility log ops plan).

MACATAK - Maintenance Capabilities Attack Model.

DATE IMPLEMENTED: 1979.

MODEL TYPE: Analysis.

PROPONENT: U.S. Army TRAC-LEE, ATTN: ATRC-LF, Ft. Lee, VA 23801-6140.

POINT OF CONTACT: Bruce Lasswell, (804) 734-1050/3449, DSN 687-1050/3449.

PURPOSE: MACATAK is an operations support tool that measures the survivability and vulnerability of division-level maintenance elements in conventional, chemical, and nuclear environments. The model assesses the effectiveness of the maintenance system as it experiences attacks both on end items it supports and on the system itself.

MAGTF II - Marine Air-Ground Task Force War Planning System II.

DATE IMPLEMENTED: 1992.

MODEL TYPE: Planning and assessment.

PROPONENT: Wargaming and Combat Simulation Center MCCDC, Quantico, VA.

POINT OF CONTACT: Mr. Carl Marchetti, (703) 696-1084, DSN: 226-1084.

PURPOSE: MAGTF-II is a micro-computer based planning system able to respond to a wide variety of high intensity operational requirements. As a system fielded by the USMC, it accelerates the development, sourcing, analysis, and refinement of plans resulting in executable JOPES Time-Phased Force Deployment Data Bases (TPFDD). Operating on standard equipment, the placing of MAGTF-II at various echelons of command results in more accurate and timely national as well as tailored force deployment data.

MASS - Mobility Analysis Support System.

DATE IMPLEMENTED: 1988.

MODEL TYPE: Analysis.

PROPONENT: CINCMAC Analysis Group, Headquarters, Military Airlift Command, Scott AFB, IL 62225-5001.

POINT OF CONTACT: Lt Col John C. Marcotte, Jr., (618) 256-8713, DSN 576-8713.

PURPOSE: MASS models the interactions between strategic airlifters in the military airlift system. It can be used to evaluate resourcing or capabilities of a specified airlift force structure.

MIDAS - Model for Intertheater Deployment by Air and Sea.

DATE IMPLEMENTED: 1981.

MODEL TYPE: Analysis.

PROPONENT: Studies, Concepts and Analysis Division, J-4, The Joint Staff, The Pentagon, Room 2E827, Washington, DC.

POINT OF CONTACT: Mr. Thomas C. Currier, (703) 697-6110, DSN 227-6110.

PURPOSE: MIDAS provides the Joint Staff (J-4) planners with an intertheater deployment model that simulates movement of combat and support units as well as sustainment for scenarios ranging from small contingencies to worldwide multitheater operations. It is a research and evaluation tool that assesses the capability of the mobility force. As such, it allows for detailed resource planning and provides for comparisons of mix effectiveness of various lift forces.

MOBCEM - Mobilization Capabilities Evaluation Model.

DATE IMPLEMENTED: Under development.

MODEL TYPE: Analysis.

PROPONENT: US Army Concept Analysis Agency, 8120 Woodmont Avenue, Bethesda, MD.

POINT OF CONTACT: Mr. Keith Kurtz or Mr. Mackie, CAA, Strategy and Plans Directorate, DSN: 295-1532.

PURPOSE: MOBCEM will model Army units, Reserve and Active Component, individual reservists, inductees, the logistics distribution system, individual training, mobilization station activities, and CONUS transportation requirements and capabilities. Currently under development, model requirement document exist, but is not available.

MOBCON - Mobilization Movement Control System.

DATE IMPLEMENTED: 1985.

MODEL TYPE: Planning and Execution..

PROPONENT: US. Army Forces Command (FORSCOM), Fort Mac Pherson, GA., Oak Ridge National Lab, TN, and Army National Guard, Washington, (703)607-7434.

POINT OF CONTACT: LTC. Easterling, HQ FORSCOM, DSN: 367-6205 or Mr. Bruce Peterson, (615) 574-4419.

PURPOSE: MOBCON is a real world operating system used by FORSCOM, ARNG, and Army Reserve to remove conflict of a mobilization throughout the 48 states. MOBCON schedules and deconflicts convoys and provides the user with visibility of all convoys in the MOBCON system. The 48 states as well as the services (Army (RC/AC), AF, MC, and Navy) use this system to execute mobilization and deployment operations. FORSCOM is planning to exercise the data from MOBCON in the FORCEGEN/FORCEFLO set of simulations to investigate alternatives and solutions.

MPM - Mobilization Policy Model.

DATE IMPLEMENTED: 1984

MODEL TYPE: Training and education.

PROPONENT: US Army War College (AWC).

POINT OF CONTACT: Mr. Carl Barton, USAWC, DSN: 242-4169, Carlisle Barracks, PA 17013.

PURPOSE: MPM is an interactive computer model developed by the Center for Strategic Wargaming (CSW). The model responds by providing detailed estimates of peacetime costs, supply and shortfalls projected for M-day, S-day, K-day and throughout the first six months of a war. This model was not developed to support analysis, but to be an exercise driver and to encourage active discussion of mobilization issues such as recruitment and retention of quality force with significant minority and female representation. It assumes a general mobilization to support a large war (Europe). Does not play unit training, medical or logistics.

MPRS - Mission Planning and Rehearsal System.

DATE IMPLEMENTED: N/A.

MODEL TYPE: Planning and Rehearsal.

PROPONENT: USARSPACE, 1670 North Newport Road, Colorado Springs, CO 80916-2749.

POINT OF CONTACT: Mr. Craig Baker, US Army Space Command, DSN: 692-8721, (719) 554-8721.

PURPOSE: MPRS is a technology that allows the integration of Landsat Thematic Mapper data and DMA digital terrain elevation data to create a 3D-perspective. With MPRS the command/analyst is able to "fly-thru" the imagery. This will permits commanders to make tactical decisions prior to troop deployment.

MSI - Multi-Spectral Imagery.

DATE IMPLEMENTED: N/A.

MODEL TYPE: Planning and Analysis.

PROPONENT: USARSPACE, 1670 North Newport Road, Colorado Springs, CO 80916-2749.

POINT OF CONTACT: Mr. Bob Krieger, US Army Space Command, DSN: 692-8773, (719) 554-8773.

PURPOSE: MSI is a process that allows users to enhance certain earth features such as vegetation and roads by combining bands of data into different color schemes. This capability will create real-time image maps to supplement Defense Mapping Agency products. Terrain analysis and intelligence preparation of the battlefield is possible. The MSI is more or a technology then a model or simulation.

NAWSIM - Naval Warfare Simulation.

DATE IMPLEMENTED: 1990.

MODEL TYPE: Training and education.

PROPOSER: HQ USAF Warrior Preparation Center (WPC), Einsiedlerhof Air Station, Einsiedlerhof, Germany APO AE 09094-5000.

POINT OF CONTACT: Maj. Ed Poniatowski, (49) 631-536-6507, DSN 489-6507.

PURPOSE: NAWSIM Models sea warfare including ship movement, surface, subsurface, and air warfare.

PEACE - Production Expansion/Acceleration Capability Enhancement.

DATE IMPLEMENTED: 1992

MODEL TYPE: Analysis

PROPOSER: Logistics Management Institute (LMI)

POINT OF CONTACT:

PURPOSE: PEACE determine future conflict maximum total inventories available to the combat theater commander within available financial resources. It looks at labor, material, production capacity, and flow time (the time it takes to make item). Linking the industrial base to warfighting requirements

POPS - Port Operational Performance Simulator.

DATE IMPLEMENTED: 1990 (current version 2.0).

MODEL TYPE: Analysis.

PROPOSER: US Military Traffic Management Command - Transportation Engineering Agency (MTMC-TEA), Newport News, VA.

POINT OF CONTACT: Mr. J. Goetz, MTMC-TEA, DSN: 927-4641, (804) 599-4641.

PURPOSE: POPS is a tool that integrates the operational parameters of port operations: shipping, staging, and terminal handling. The model yields values of daily port throughput capability in terms of short tons (STONS) and measurement tons (MTONS) based on a weak-link analysis of the transportation subsystem normally associated with operations at seaports. During program execution, the user has the option of interactively selecting the resulting output.

RAPIDSIM - Rapid Intertheater Deployment Simulation Model.

DATE IMPLEMENTED: 1970.

MODEL TYPE: Analysis.

PROPONENT: Logistics Directorate, The Joint Staff, The Pentagon, Washington, DC.

POINT OF CONTACT: Gail Sweet, (703) 694-7899, DSN 224-7899.

PURPOSE: RAPIDSIM provides Joint Staff (J-4) planners with a deployment simulation model that helps achieve a rapid movement of combat and support units required for contingency operations. It is a research and evaluation tool that deals with force capability and requirements and resource planning.

RDSS-SNM - Regional Development Simulation System/Single Nation Model.

DATE IMPLEMENTED: 1991.

MODEL TYPE: Analysis, training, and education.

PROPONENT: J-8 Political Military Affairs Directorate.

POINT OF CONTACT: LTC Steven G. Starner, DSN: 225-2020.

PURPOSE: RDSS is a system dynamics model of lesser developed nations. RDSS is used as a decision aid tool in testing various policy alternatives available to the U.S. and to other developed nations to impact the lesser developed nation. It is also used as a training and education tool (seminar exercise driver) in operational and strategic level gaming within the low intensity conflict environment.

RESA - Research, Evaluation, and Systems Analysis Facility (formerly Interim Battle Group Tactical Trainer [IBGTT]).

DATE IMPLEMENTED: 1982.

MODEL TYPE: Analysis.

PROPONENT: Naval Ocean Systems Center, San Diego, CA 92152.

POINT OF CONTACT: Dr. Tom Fitzgerald, (619) 553-3968, DSN 533-3968.

PURPOSE: RESA is a research and evaluation tool for systems analysis and testing associated with naval command, control, and communications systems. It is also used for operation plan evaluation, command and control training support for senior officers, joint C3 interoperability assessment, warfare systems architecture analysis, and wargaming support.

RSAS - Rand Strategy Assessment System.

DATE IMPLEMENTED: 1988 (development began in 1983).

MODEL TYPE: Analysis (but has been used as a training model/exercise driver).

PROPONENT: Director, OSD/NA, The Pentagon, Room 3A930, Washington, DC 20318.

POINT OF CONTACT: CDR Robert Wilde, USN, (703) 697-1312, DSN 227-1312.

PURPOSE: RSAS provides a laboratory for the analysis of military strategy and operations in which alternative strategies and operations are evaluated in terms of the robustness of outcomes across the inherent range of uncertainty in scenarios, performance factors, and rules of war. RSAS can also be used for training and other requirements.

RSSIA - Regional Security Strategy Implementation Analysis.

DATE IMPLEMENTED: 1990.

MODEL TYPE: Analysis and Planning.

PROPONENT: J8/ Political Military Affairs Div

POINT OF CONTACT: LTC Starner, DSN: 225-2020.

PURPOSE: RSSIA is a model to evaluate host nations in a region in terms of relative political stability, socioeconomic potential, and importance relative to US interests. It is used in a seminar gaming pol/mil wargame. Helps focus regional planner and

strategist on return on investment of alternative US investment/assistance packages.

high		Thailand
s	:	
t	:	Vietnam
a	:	
b	:	Laos
i	:	
l	:	Cambodia
i	:	
t	:	
y	:	high
		socioeconomic

SABRE - Single Army Battlefield Requirements Evaluator.

DATE IMPLEMENTED: 1991

MODEL TYPE: Analysis and Planning

PROPONENT: HQDA, US Army Artificial Intelligence Center (AI), Pentagon, Washington DC.

POINT OF CONTACT: CPT. Michael C. Wilmer, Army AI Center, (703) 697-7250. DSN 227-7250/

PURPOSE: SABRE is a Planner and force structure tool to rapidly construct a task force organization, assign units to it, and then analyze the force. A number of standard Army databases are used in SABRE: force structure (FROFA/SAMAS), CINC OPLAN/TPFDD, equipment (TAEDP), and status (SORTS/QRS). SABRE is made up of five modules which allow one to build a task force package, establish criteria for the units in the package, fill with actual units, analyze the results, and assess modernization decision into the future of the units.

SEASTRAT - Strategic Sealift Planning System.

DATE IMPLEMENTED:

MODEL TYPE: Analysis.

PROPONENT:

POINT OF CONTACT:

PURPOSE: SEASTRATE is a strategy sealift tool that models from POE to POD. It is under consideration for integrating into the USTRANSCOM's Analysis of Mobility Platform (AMP) for end-to-end mobility modeling.

SIMNET(BDS-D) - Simulation Network.
SIMNET(CCTT)

DATE IMPLEMENTED: 1990 (Continuous Development).

MODEL TYPE: Training, Rehearsal and Education.

PROPONENT: US Army Armor Center, Fort Knox, KY and STRICOM, Orlando, FL.

POINT OF CONTACT: LTC. Paul D. Peterson, TRADOC CATT, Fort Knox, KY, DSN: 464-1600, (502) 624-1600 or Mr. Jay Anton ADST/BDS-D, Programs Manager, Fort Rucker, AL 36362, (205) 598-5370.

PURPOSE: SIMNET originally was developed for training multiple crews to perform as teams. The SIMNET technology is being developed into a second generation system that can be used within the combat development community for limited analysis. CCTT is that program. At the same time agencies such as TRAC and others are integrating the SIMNET technology into the "constructive models/simulation". Eagle/BDS-D and BBS/SIMNET are such programs.

SITAP - Simulation for Transportation Analysis and Planning.

DATE IMPLEMENTED: 1968.

MODEL TYPE: Analysis.

PROPONENT: Logistics Directorate, The Joint Staff, (J4) The Pentagon, Washington, DC.

POINT OF CONTACT: Nancy Hardy, (703) 694-8026, DSN 224-8026.

PURPOSE: SITAP provides the user with insight into the operational behavior of a given inter/intratheater transportation system through simulation modeling.

SOFPARS - Special Operations Forces Planning and Rehearsal System.

DATE IMPLEMENTED: Under development by Air Force.

MODEL TYPE: Operational and Planning.

PROPONENT: Special Operations Command Research Development and Acquisition (SORDAC), MacDill AFB, FL 33608 and Air Force Mission Support System (AFMSS), Lockheed Sanders, Inc.

POINT OF CONTACT: Mr. David Kuma, SORDAC, USSOCOM, DSN: 299-5277, (813) 840-5277

PURPOSE: SOFPARS is an mission planning system that will be portable (can be transported to the theater of operations). Currently it is in phase I of development, air. SOFPARS includes weather, intel, CMS (common mapping standards) to plan and rehearsal a mission. The AF is currently developing aircraft data for the system. Phase II is the ground/maritime interface. According to the developer SOFPARS phase I will be delivered in July 93 and phase II in Oct 93.

SPEC - Space Environmental Compatibility Model.

DATE IMPLEMENTED: 1990.

MODEL TYPE: Analysis.

PROPONENT: DoD Electromagnetic Compatibility Analysis Center, North, Severn, Annapolis, MD 21402-1187.

POINT OF CONTACT: R. Schneider, (301) 267-2355, DSN 281-2355.

PURPOSE: SPEC is a research and evaluation tool that evaluate electromagnetic interactions between large numbers of space and terrestrial systems. SPEC can be used to determine the connectivity and interference, both intentional and unintentional,

from space system to space system, space system to terrestrial system, and terrestrial system to space system. The model is used to determine the incident power density or received signal power to uplink, downlink, and/or crosslink receivers. SPEC uses U.S. Space Command's ASTROLIB routines to determine orbital positions allowing a wide variety of orbits to be considered. Color coded graphics illustrating the orbital positions of the space systems provide identification of incidents when user specified thresholds have been exceeded. Menus provide an interface conducive to performing large or small analyses. Printed colored graphics along with hardcopy reports convey results.

SPEC2 - Space Enhanced Command and Control.

DATE IMPLEMENTED: N/A.

MODEL TYPE: Operational Planner.

PROPONENT: USARSPACE, 1670 North Newport Road, Colorado Springs, CO 80916-2749.

POINT OF CONTACT: MAJ. Jensen, US Army Space Command, DSN: 692-8716, (719) 554-8716.

PURPOSE: SPEC2 is a Space Enhanced Command and Control program/system. It is interfacing a wide array of space-based technologies. SPEC2 can provide tactical commanders space-enhanced awareness that allows them to see the battlefield. A demonstration program is available.

STACCS-- Standard Theater Army Command and Control System.

DATE IMPLEMENTED: N/A.

MODEL TYPE: Operational Command and Control.

PROPONENT:

POINT OF CONTACT:

PURPOSE: STACCS is a real-world command and control system that monitor and schedule flow of forces and supply into the theater of operation. It monitors end-to-end force tracking (theater ULN movement, integrate unit management, interface to JOPES/WWMCCS for submission/receipt, in-theater transportation flow, and interface

with battlefield simulation models). It is a decision support system under DDN.

STADSS - Strategic Transportation Analysis Decision Support System (MTMC-TEA).

DATE IMPLEMENTED: 1990.

MODEL TYPE: Analysis.

PROPONENT: US MTMC-TEA, Newport News, VA.

POINT CONTACT: Dr. Knickmeyer, MTMC-TEA, Newport News, VA, (804) 599-1605, DSN: 927-1605.

PURPOSE: STADSS is a common national transportation database that is underdevelopment in stages. The stages are: CONUS, OCONUS, and DTS. Information such as speed limit, population, tunnel, etc. are part of the DSS. The strategic highway corridor network (STRAHNET) and federal railway system is part of the DSS. The goal is to perform CONUS transportation analysis, unit/force movement simulation.

STRADS - Strategic Deployment System.

DATE IMPLEMENTED: 1990.

MODEL TYPE: Analysis.

PROPONENT: US MTMC-TEA, Newport News, VA.

POINT OF CONTACT: Dr. Knickmeyer, MTMC-TEA, Newport News, VA, (804) 599-1605, DSN: 927-1605.

PURPOSE: STRADS is a system that MTMC uses to quickly assess deploying forces, to provide movement information associated with deploying forces to USTRANSCOM and other DOD agencies. Conduct transportation feasibility analyses, perform "what if", and assist in development of movement plans and battlebooks.

TACSIM - Tactical Simulator.

DATE IMPLEMENTED: 1 September 1980.

MODEL TYPE: Training and education.

PROPONENT: Program Manager - Training Devices, (PM TRADE), Orlando, FL.

TRADOC Proponent: CAC-TNG, Fort Leavenworth, KS 66027-7000.

POINT OF CONTACT: Edward N. Sowell, HQ TEXCOM, ATTN: ATCT-BA-SIM, Fort Hood, TX 76544; DSN 738-9517; TRADOC POC: MAJ Marion, DSN 552-3180, ATZL-CTS-DC.

PURPOSE: To provide an interactive computer-based simulation to support intelligence and electronic warfare (IEW) system development and testing; command post training exercises (CPX); and evaluations of IEW and command, control and communications (C3) functions. It supports decisions, corps and echelons above corps (EAC) systems evaluation, training and the all-source analysis system/enemy situation correlation element (ASAS/ENSCE) program development.

TACWAR - Tactical Warfare.

DATE IMPLEMENTED: 1984.

MODEL TYPE: Analysis.

PROPONENT: Joint Staff, Force Structure, Resource, and Assessment Directorate (J-8), Automation Support Division, Washington, DC 20318-8000.

POINT OF CONTACT: Mr. Arthur W. Paarmann, (703) 697-7824.

PURPOSE: TACWAR is primarily a research and evaluation tool, but can be used as an operation support tool. This includes force mix capabilities at an aggregated level of weapon effectiveness against targets.

TAM - Theater Analysis Model.

DATE IMPLEMENTED: 1984.

MODEL TYPE: Analysis (neither a decision maker nor an exercise driver).

PROPOSER: Force Structure, Resource, and Assessment Directorate (J-8), The Joint Staff, The Pentagon, Room BC942, Washington, DC 20318-8000.

POINT OF CONTACT: CDR Craig C. Perry or LTC Steve Starnes, (703) 695-2020, DSN 225-2020.

PURPOSE: TAM provides the results of military conflict incidental to the conduct of politico-military games. It deals with force capabilities and requirements and provides a foundation for players to assess courses of action and resource planning.

TM3 - Trade off Mobilization Macro Model.

DATE IMPLEMENTED: 1992

MODEL TYPE: Analysis.

PROPOSER: HQDA, ODCSOPS, Pentagon, Washington DC. Developer is Vector Research, Inc. (VRI).

POINT OF CONTACT: Mr. Mike Moore, ODCSOPS, DSN: 227-8889, Office of DCSOPS Tech Advisor and Mr. Lincoln Smith, (313)973-9210, is the VRI POC.

PURPOSE: This model was developed for HQDA DCSOPS (Mr. Mike Moore) for the Integrated Army Mobilization Study (IAMS) and may support the RAND AC/RC Mix Study due in Dec 1992. The model has three modules: personnel, material, and units. It also has a small deployment modules that assess the timeliness of the assets. A PC based model that can run on a 386 machine.

TRANSMO - Transportation Model.

MODEL TYPE: Analytical.

DATE IMPLEMENTED: 1973.

PROPOSER: U.S. Army Concepts Analysis Agency.

POINT OF CONTACT: Ms. Vera W. Hayes, (DSN) 295-1137 or (301) 295-1137.

PURPOSE: TRANSMO is used primarily to analyze strategic deployment issues taken

in the context of the Defense Guidance Illustrative Planning Scenario (DGIPS). It specifically simulates the loading of cargo on intertheater lift vehicles, ultimately resulting in an arrival sequence of cargo in the theater(s) of operation.

TSAR - TRANSCOM Siting and Readiness.

DATE IMPLEMENTED: 198 .

MODEL TYPE: Analysis.

PROPONENT: US Transportation Command (TRANSCOM), Scott AFB, IL.

POINT OF CONTACT: LTC. Fred M. Rawcliffe, J5, DSN: 576-5109, (618) 256-5109.

PURPOSE: TSAR is an allocation refinement software that matches ships/cargo and attempts to optimizes their use for a given requirement. It will accept the output of FORCEFLO, which deliveries to a port.

TTSM - Theater Transition and Sustainment Model.

DATE IMPLEMENTED: 1991.

MODEL TYPE: Training and education (under development).

PROPONENT: HQ USAFE Warrior Preparation Center (WPC), Einsiedlerhof Air Station, Einsiedlerhof, Germany APO AE 09094-5000.

POINT OF CONTACT: Ms. Marsha Plinske, (49) 631-536-6507, DSN 489-6507.

PURPOSE: TTSM will function as a command post exercise driver. It will model wartime support activities that occur during the transition to war and during combat in theater rear-area operations.

VIC - Vector In Commander.

DATE IMPLEMENTED: 1986.

MODEL TYPE: Analysis.

PROPONENT: TRAC-OAC, Fort Leavenworth, KS, 66027.

POINT OF CONTACT: Mr. Kent H. Pickett, TRAC-OAC, DSN: 552-4595.

PURPOSE: VIC is a computerized, analytical, mid-intensity model developed for use in estimating net assessments, performing force deployment studies, and generating information for performing trade-offs among weapon systems. The outcome of force interactions is determined in terms of the ground gained or lost and the attrition of personnel and weapon systems.

WAAM - Worldwide Military Command and Control System (WWMCCS) Allocation and Assessment Model.

DATE IMPLEMENTED: 1983.

MODEL TYPE: Analysis of Command, Control Communications (C3).

PROPONENT: Defense Communications Agency.

POINT OF CONTACT: Dr. Crowley, DCA, (703) 692-5023.

PURPOSE: WAAM has the capability to rapidly assess the emergency action message (EAM) dissemination and performance of the WWMCCS and WWMCCS-based C3 architectures in nuclear stressed environments. It provides a single capability that is responsive to changes (i.e., increases, decreases, improvements, and changes in the U.S. C3 assets) as they may occur and provides a highly credible result. To support the annual SIOP/RISOP war game analysis, WAAM data sets and subroutines are updated to model current MEECN and EAM procedures for executing the SIOP. Numerous simulation excursions are performed to represent varying strategic scenarios and to model adverse conditions that may affect U.S. C3 capabilities. The output from the WAAM functional assessments are analyzed to produce inputs for SINBAC specifying WWMCCS degradation in simulated RED and BLUE nuclear exchanges.

WWMCCS/WAAM - Worldwide Military Command and Control System/Allocation and Assessment Model.

DATE IMPLEMENTED: 1986.

MODEL TYPE: Analysis.

PROPONENT: Defense Information Systems Agency, Code TVAB, 3701 N. Fairfax Drive, Arlington, VA 22203-1713.

POINT OF CONTACT: Mr. Brad Stubbs, DSN 226-1837, Commercial (703) 696-1837.

PURPOSE: WAAM is a research and evaluation tool for assessing the effectiveness of current and potential communications systems in disseminating Emergency Action Messages (EAMs) to strategic forces in a nuclear stressed environment. It provides a realistic assessment of the changes in overall strategic C3 system performance in response to changes in equipment, procedures or operational posture within the context of a user defined threat.